REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

After entry of the foregoing amendment, Claims 1-2, 4-9, 11-17 and 19-24 remain pending in the present application. Claims 3, 10 and 18 are cancelled without prejudice or disclaimer. The pending claims have been amended to address cosmetic matters of form, and to incorporate cancelled subject matter. Additionally, the title of the invention has been amended. No new matter has been added.

By way of summary, the Official Action presents the following issues: Claims 1-6, 8-13, 15-21, 23 and 24 stand rejected under 35 U.S.C. §102 as being anticipated by Miyairi (U.S. Patent No. 5,018,155, hereinafter Miyairi); and Claims 7, 14 and 22 stand rejected under 35 U.S.C. §103 as being unpatentable over Miyairi in view of Koike et al. (U.S. Patent No. 5,625,616, hereinafter Koike).

REJECTIONS UNDER 35 U.S.C. §102

The Official Action has rejected Claim 1-6, 8-13, 15-21, 23 and 24 under 35 U.S.C. §102 as being unpatentable over Miyairi . The Official Action contends that Miyairi describes all of the Applicants claimed features. Applicants respectfully traverse the rejection.

Applicants amended Claim 1, recites, *inter alia* a laser driving apparatus including:

> ... control means for controlling said amplitude of said radio frequency current on the basis of values of said drive current obtained by said current monitoring means at a plurality of said amplitudes of said radio frequency current obtained by said amplitude control means or detection values of said optical output of said laser obtained by said optical detection means at said plurality of said amplitudes of said radio frequency current obtained by said amplitude control means, said control means obtains a difference between said driving current monitored when said radio frequency current is superimposed on said driving current and said driving current monitored when said radio frequency current is not superimposed on said driving

current, and controls said amplitude of said radio frequency current on the basis of said difference under the condition that said optical output of said laser is maintained at said constant level.

Miyairi describes a semiconductor laser driving apparatus in which a differential efficiency, which is defined as the variation of the emitted light amount of the semiconductor laser as it relates to the operating current variation of the semiconductor laser, is compensated such that the emitted power of a laser remains constant.[1] More specifically, a high frequency superimposing signal is increased or decreased so that a predetermined change in emitted laser power is achieved. As shown more specifically in Figure 2, an initial calibration procedure is performed at steps S1-S14. In these steps, an emitted power of the laser is calibrated when no recording medium is present.[2] At step S15, an APC (automatic photo output control) is initiated and the APC loop switch (9) is switched on to provide a high frequency superimposing signal to the laser drive signal. At steps S16-S18, a voltage controlled amplifier (7) is controlled in a step-wise fashion until a predetermined operational laser drive amount is achieved.[3] More specifically, the VCA (7) is controlled to adjust a laser drive current to coincide with the previously calibrated values to provide for differences in differential efficiency of the laser device.

Conversely, in an exemplary embodiment of the Applicants claimed advancements, a laser driving apparatus includes a laser driving circuit for supplying a drive current to a laser, radio frequency current super imposing means for generating a radio frequency current and superimposing the radio frequency current on the drive current. A current monitor monitors the drive current. An optical detector detects an optical output of the laser. An amplitude controller controls an amplitude of the radio frequency current to be superimposed on the drive current. The amplitude control controller controls whether the radio frequency current is superimposed on the driving current or not. An optical output controller controls the laser

[1] See Miyairi at column 3, lines 36-56.
[2] See Miyairi at column 4, lines 46-65.

driving circuit to maintain the optical output of the laser at a constant level. A controller controls the amplitude of the radio frequency current on the basis of values of the drive current obtained by the current monitor at a plurality of amplitudes of the radio frequency current obtained by the amplitude controller or, detection values of the optical output of the laser obtained by the optical detector at the plurality of amplitudes of the radio frequency current obtained by the amplitude controller. The controller obtains a difference between the driving current monitored when the radio frequency current is superimposed on the driving current and the driving current monitored when the radio frequency current is not superimposed on the driving current. In this way, the controller controls the amplitude of the radio frequency current on the basis of the difference of values of the drive current under the condition that the optical output that the laser is maintained at the constant level.

Miyairi does not describe or suggest a controller which obtains a difference between a drive current monitored when a radio frequency current is superimposed and the drive current when the radio frequency current is not superimposed such that the amplitude of the radio frequency current is controlled on the basis of the difference under the condition that the optical output of the laser is maintained at a constant level. Instead, Miyairi describes increasing a high frequency signal in a step-wise fashion, based on comparison to calibrated output values of the laser and current values of the output of a laser. There is no description of Miyairi of obtaining a difference between a drive current before and after radio frequency current is superimposed thereon and utilizing this difference as a basis for controlling the amplitude of a radio current of the superimposing radio frequency current.

Accordingly, Applicants respectfully request that the rejection of Claims 1-6, 8-13, 15-21, 23 and 24 under 35 U.S.C §102 be withdrawn.

---

[3] See Miyairi at figure 2; column 6, lines 7-44.

REJECTIONS UNDER 35 U.S.C. §103

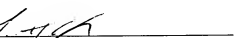
The Official Action has rejected Claims 7, 14 and 22 under 35 U.S.C. §103 as being unpatentable over Miyairi in view of Koike, et al. The Official Action contends that Miyairi describes all of the Applicants claimed features with the exception of temperature functionality and structure. The Official Action cites Koike as describing these more detailed aspects of the Applicants claimed advancements, and states that it would have been obvious to one of ordinary skill in the art, at the time the advancements were made, to combine the cited references arriving at the Applicants claims. Applicants respectfully traverse the rejection. As noted above Miyairi does not describe all of the features of the Applicants amended claims for which it has been asserted. As Koike does not remedy the deficiencies above, applicants respectfully submit that a *prima facia* case of obviousness has not been presented.

Accordingly, Applicants respectfully request that the rejection of claims 7, 14 and 22 under U.S.C. §103 be withdrawn.

CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present application, including Claims 1-2, 4-9, 11-17 and 19-24 is patentably distinguished over the prior art, in condition for allowance, and such action is requested at an early date.

Respectfully submitted,
OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073
Scott A. McKeown
Registration No. 42,866

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)